

SERVICE MANUAL

A T T . Z o n e
AMPLIFIER

PAM-510/520

interM

www.inter-m.com
MADE IN KOREA

interM

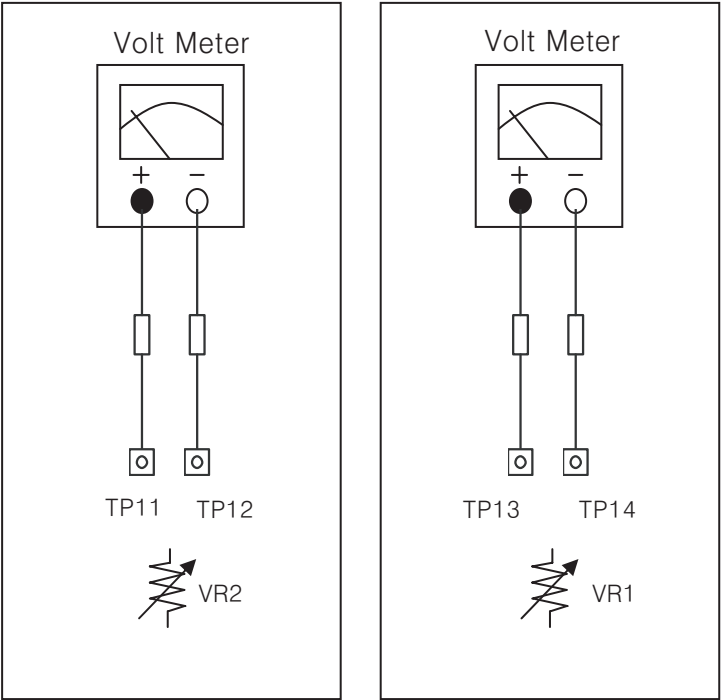
CONTENTS

| | |
|--|-------|
| Electrical Adjustment Procedure | 1 |
| Specifications | 2 |
| Electrical Parts List | 3~6 |
| Top and Bottom View of P.C.Board | 7~16 |
| Wiring Diagram | 17~18 |
| Block Diagram | 19~20 |
| Schematic Diagram | 21~30 |
| Exploded View of Cabinet & Chassis / Mechanical Parts list | 31~32 |

ELECTRICAL ADJUSTMENT PROCEDURE

■ IDLE CURRENT

A. Connection



B. Adjustment

To make this amplifier work properly, set the idle current as follow.
First turn on the power switch with no audio input
About 2 minutes later,
Adjust semi volume VR1,VR2 of AMP B'D until the meters read 0.7~0.8mV.

SPECIFICATIONS

| | | PAM-510 | PAM-520 |
|---|---|--|-----------|
| Amplifier Section (Amp In@1kHz, 4Ω Load Output) | Rated Output Power (THD 1%) | 120W(RMS) | 240W(RMS) |
| | Speaker Zone 1~5 Output | 25W MAX | 50W MAX |
| | Input Sensitivity/Impedance | 1V/20kΩ | |
| | S/N | Better than 85dB | |
| | Frequency Response (at 1kHz Half Power Output, ±3dB) | 80Hz~18kHz | |
| Mic Input Section (Mic 1~4 In@1kHz, Preamp Out) | Input Sensitivity/Impedance | -60dBV/600Ω | |
| | S/N | Better than 55dB | |
| | Frequency Response (±3dB) | 120Hz~10kHz | |
| | Tone Control (Bass:100Hz, Treble:10kHz) | ±12dB | |
| Line Input Section (Line 1~2 In@1kHz, Preamp Out) | Phantom Power | +24VDC | |
| | Input Sensitivity/Impedance | -30dBV/10kΩ | |
| | S/N | Better than 65dB | |
| | Frequency Response (±3dB) | 80Hz~15kHz | |
| Remote Amp Section (Remote In@1kHz, Preamp Out) | Tone Control (Bass:100Hz,Treble:10kHz) | ±12dB | |
| | Mic Input Sensitivity/Impedance | -60dBV/600Ω | |
| | S/N | Better than 55dB | |
| Tel In Section (Tel In@1kHz, Preamp Out) | Frequency Response (±3dB) | 120Hz~10kHz | |
| | Input Sensitivity/Impedance | 0.3V/600Ω(USA/Canada) | |
| | S/N | 0.775V/600Ω(EC & Associated) | |
| Pre Amp Out(Mic 1~4, Line 1~2, Tel In, Remote In) | | Better than 65dB | |
| T.H.D | | 330Hz~3kHz | |
| Record Out | | 0dBV/600Ω | |
| Power Source | | Less than 0.5% | |
| Power Consumption (1/8 POWER) | | -10dBV/3kΩ | |
| Weight | | 100~120VAC or 220~240VAC; 50/60Hz, 24VDC | |
| Dimensions | | 180W | 320W |
| Operating Temperature | | 17kg/37.6lb | 19kg/42lb |
| | | 482(W) x 132(H) x 398(D)mm | |
| | | 19(W) x 5.2(H) x 15.7(D)in | |
| | | -10°C~40°C | |

* Specifications and design subject to change without notice.

ELECTRICAL PARTLIST

| Part No. | Part No. | Description | Value |
|------------------------|--------------|---|--------------|
| POWER B'D (4005419000) | | | |
| J1 J3-42 | 1508400501 | JUMPER WIRE,0.5/52M/M | JUMPER |
| Q904 | 2008407970-T | TR,SG,NPN,800mA,120V,KTC1027,TO-92L,TA | KTC1027-Y |
| Q901 | 2008606105-T | TR,SG,PNP,150mA,50V,KTA1266Y,TO-92,TA | KTA1266-Y |
| Q903 Q905 | 2008606108-T | TR,SG,NPN,100MA,120V,KTC3200BL,TO-92,TA | KTC3200-BL |
| Q902 | 2028106970 | TR,PW,PNP,5A,100V,KTb1367,TO-220IS | KTb1367-Y |
| Q907 | 2028406113 | TR,PW,NPN,3A,60V,KTD2058,TO-220AB | KTD2058-Y |
| Q906 | 2028406114 | TR,PW,NPN,5A,100V,KTD2059,TO-220IS | KTD2059-Y |
| BD1 | 2058100978 | DIODE,BR,35A,400V,GL3504,GL | GL3504 |
| BD2 | 2058100985 | DIODE,BR,1.5A,400V,W04G,W0G | W04G |
| D11 D902-904 | 2058100996 | DIODE,RE,1A,800V,1N4006,DO-41,TA | 1N4006(4007) |
| D907-910 | | | |
| D901 | 2058300997 | DIODE,S-RE,30A,40V,SR3040PT,TO-3P | SBL 3040PT |
| D905-906 | 2058304100 | DIODE,SW,100mA,75V,1N4148M,DO-34M,TA | 1N4148 |
| ZD901 | 2058502180 | DIODE,ZN,500MW,BM,18V,DO-35,TA | 18BM |
| U901-904 | 2128610400 | IC,VOLT REG,24V,1A,7824,TO-220AB | 7824 |
| R925 | 3009100973 | RES,MF,10,1/5W,5%,AX N,TA | 10 2W |
| R903 R909-910 | 3009103973 | RES,MF,10K,1/5W,5%,AX N,TA | 10K |
| R915 | 3009221973 | RES,MF,220,1/5W,5%,AX N,TA | 220 |
| R907 | 3009242973 | RES,MF,2.4K,1/5W,5%,AX N,TA | 2.4K |
| R902 | 3009243973 | RES,MF,24K,1/5W,5%,AX N,TA | 24K |
| R905 R921-922 | 3009272973 | RES,MF,2.7K,1/5W,5%,AX N,TA | 2.7K |
| R924 | | | |
| R904 R923 | 3009332973 | RES,MF,3.3K,1/5W,5%,AX N,TA | 3.3K |
| R911 | 3009333973 | RES,MF,33K,1/5W,5%,AX N,TA | 33K |
| R901 R908 | 3009512973 | RES,MF,5.1K,1/5W,5%,AX N,TA | 5.1K |
| R916 | 3039100575-T | RES,MF,10,2W,5%,RA R,TA | 10 2W |
| R906 | 3039200575-T | RES,MF,20,2W,5%,RA R,TA | 20 2W |
| R914 | 3039332575-T | RES,MF,3.3K,2W,5%,RA R,TA | 3.3K 2W |
| R917-919 | 3039569575-T | RES,MF,5.6,2W,5%,RA R,TA | 5.6 2W |
| R912 | 3059339774 | RES,CE,WW,3.3,5W,5% | 3.3 5W |
| C904 C910 | 3409210171-T | CAP,E,SM,SG,85C,100uF,50V,M,8P,TA | 100/50 |
| C905 C907 | 3409222171-T | CAP,E,SM,SG,85C,220uF,50V,M,10P,TA | 220/50 |
| C912 | 3409247071-T | CAP,E,SM,SG,85C,47uF,50V,M,6P,TA | 47/50 |
| C901 | 3419515379 | CAP E LPW 15000UF 50V JAMICON | 15000/50 |
| C908 C911 | 3419547177 | CAP,E,SM,SD,85C,470uF,50V,M,10x20 | 470/50 |
| C913-914 | | | |
| C916-917 C919 | | | |
| CR901-910 | 3539104531-A | CAP,CE,SEMI,Y5V,0.1uF,50V,Z,AX,TA | 0.1U |
| C902 | 3609224153-T | CAP TL 0.22UF 250V J(10MM) | 0.22/250(M) |
| G10 | 4235007210 | TERMINAL,GND,q95 | GND |
| FU3-4 | 4255000410 | FUSE CLIP,6x31.8 | CLIP 31.8mm |
| TL1 | 4355461813 | CON ASS'Y 1P RED #14 250-TER | ASS'Y-01P |
| TL2 | 4355462015 | CON ASS'Y 1P BLK TUBE 250-TER | ASS'Y-01P |
| AN103 | 4355755713 | CON ASS'Y,FL,5P,5264,BH0640,270MM | ASS'Y-05P |
| AN902 | 4355918503 | CON ASS'Y,FL,2P,5264,5395,100mm | ASS'Y-02P |
| CN101 CN502 | 4428595003 | CON WAFER,BOX(M),3P,ST | LW5267-03P |
| CN303 | 4428595006 | CON WAFER,BOX(M),6P,ST | LW5267-6P |
| TER1 | 4438094620 | TERMINAL,DC,2P,19mm,AN | TERMINAL02P |
| AI901 | 4440000100 | AC INLET (B'D IN TYPE) | ACIN |
| FU1-2 | 4458999110 | FUSE CLIP 5*20 | CLIP 20mm |
| FU5-10 | | | |
| TER902 | 4465997702 | TERMINAL,SCREW,2P,10mm,ST | TERMINAL02P |
| TL3-10 | 4465998210 | TERMINAL(250)PCB TAB | 250T |
| RY902 | 5528009810 | RELAY,SPST,24V,40A,125VAC,VKP-31H42 | DC 24V |
| RY901 | 5528009980 | RELAY,SPDT,24V,10A,250VAC,HR-CR3A11 | DC 24V |
| INPUT B'D (4005419100) | | | |
| JP1-18 | 1508400501 | JUMPER WIRE,0.5/52M/M | JUMPER |
| JP53-54 | | | |
| JP58-91 | | | |
| JP93-103 | | | |
| JP105-110 | | | |
| JP134-144 | | | |
| D151 | 2058100996 | DIODE,RE,1A,800V,1N4006,DO-41,TA | 1N4006 |
| U101-106 | 2168220989 | IC,OP AMP,NJM2068L,SIP8 | 2068L |
| R112A R112B | 3003220953 | RES,MF,2.2K,1/5W,1%,AX N,TA | 2.2K 1% |
| R112C R112D | | | |
| R138E R138F | | | |
| R139E R139F | 3003390953 | RES,MF,3.9K,1/5W,1%,AX N,TA | 3.9K 1% |
| R117A R117B | 3003680953 | RES,MF,6.8K,1/5W,1%,AX N,TA | 6.8K 1% |
| R117C R117D | | | |
| R118A R118B | | | |
| R118C R118D | | | |
| R115A R115B | 3004274953 | RES,MF,274,1/5W,1%,AX N,TA | 274 1% |
| R115C R115D | | | |
| R140E R140F | 3009100973 | RES,MF,10,1/5W,5%,AX N,TA | 10 |
| R135E R135F | 3009102973 | RES,MF,1K,1/5W,5%,AX N,TA | 1K |
| R141 | 3009103973 | RES,MF,10K,1/5W,5%,AX N,TA | 10K |
| R109A R109B | | | |
| R109C R109D | | | |

| Part No. | Part No. | Description | Value |
|---------------|--------------|-------------------------------------|----------|
| R110A R110B | | | |
| R110C R110D | | | |
| R113A R113B | | | |
| R113C R113D | | | |
| R114A R114B | | | |
| R114C R114D | | | |
| R133E R133F | | | |
| R136E R136F | | | |
| R137E R137F | | | |
| R119A R119B | 3009104973 | RES,MF,100K,1/5W,5%,AX N,TA | 100K |
| R119C R119D | | | |
| R153-154 | 3009122973 | RES,MF,1.2K,1/5W,5%,AX N,TA | 1.2K |
| R116A R116B | 3009180973 | RES,MF,18,1/5W,5%,AX N,TA | 18 |
| R116C R116D | | | |
| R152 R155 | 3009302973 | RES,MF,3K,1/5W,5%,AX N,TA | 3K |
| R131E R131F | 3009331973 | RES,MF,330,1/5W,5%,AX N,TA | 330 |
| R132E R132F | | | |
| R105A R105B | 3009332973 | RES,MF,3.3K,1/5W,5%,AX N,TA | 3.3K |
| R105C R105D | | | |
| R106A R106B | | | |
| R106C R106D | | | |
| R103A R103B | 3009430973 | RES,MF,43,1/5W,5%,AX N,TA | 43 |
| R103C R103D | | | |
| R104A R104B | | | |
| R104C R104D | | | |
| R101A R101B | 3009433973 | RES,MF,43K,1/5W,5%,AX N,TA | 43K |
| R101C R101D | | | |
| R102A R102B | | | |
| R102C R102D | | | |
| R107A R107B | 3009561973 | RES,MF,560,1/5W,5%,AX N,TA | 560 |
| R107C R107D | | | |
| R108A R108B | | | |
| R108C R108D | | | |
| R134E R134F | 3009822973 | RES,MF,8.2K,1/5W,5%,AX N,TA | 8.2K |
| R111A R111B | 3009912973 | RES,MF,9.1K,1/5W,5%,AX N,TA | 9.1K |
| R111C R111D | | | |
| R151 | 3039330575-T | RES,MF,33,2W,5%,RA R,TA | 33 2W |
| R120A R120B | 3089470275 | RES,FS,MF,47,1/4W,5%,RA R,TA | FR 47 |
| R120C R120D | | | |
| VR101A VR101B | 3228050330 | VR,ROT,VER,1U,L30,50K,C | 50KC |
| VR101C VR101D | | | |
| VR101E VR101F | | | |
| C112A C112B | 3409210071-T | CAP,E,SM,SG,85C,10uF,50V,M,5P,TA | 10/50 |
| C112C C112D | | | |
| C109A C109B | 3409222071-T | CAP,E,SM,SG,85C,22uF,50V,M,5P,TA | 22/50 |
| C109C C109D | | | |
| C110A C110B | | | |
| C110C C110D | | | |
| C113A C113B | | | |
| C113C C113D | | | |
| C115F C135E | | | |
| C105A C105B | 3409247041-T | CAP,E,SM,SG,85C,47uF,25V,M,6P,TA | 47/25 |
| C105C C105D | | | |
| C106A C106B | | | |
| C106C C106D | | | |
| C132E C132F | | | |
| C136E C136F | | | |
| C103A C103B | 3409247071-T | CAP,E,SM,SG,85C,47uF,50V,M,6P,TA | 47/50 |
| C103C C103D | | | |
| C104A C104B | | | |
| C104C C104D | | | |
| C117A C117B | | | |
| C117C C117D | | | |
| C139E C139F | | | |
| C115A C115B | 3409710070-T | CAP,E,NP,NP,85C,10uF,50V,M,5x11,TA | 10/50 NP |
| C115C C115D | | | |
| C138E C138F | | | |
| C116A C116B | 3419547177 | CAP,E,SM,SD,85C,470uF,50V,M,10x20 | 470/50 |
| C116C C116D | | | |
| C153-154 | 3509101231-A | CAP,CE,HI-DI,Y5P,100pF,50V,K,AX,TA | 100P |
| C151 | 3509102231-A | CAP,CE,HI-DI,Y5P,1000pF,50V,K,AX,TA | 1000P |
| C101A C101B | | | |
| C101C C101D | | | |
| C102A C102B | | | |
| C102C C102D | | | |
| C107A C107B | | | |
| C107C C107D | | | |
| C108A C108B | | | |
| C108C C108D | | | |
| C118A C118B | 3509103530-T | CAP,CE,HI-DI,Y5V,0.01uF,50V,Z,RA,TA | 0.01U |
| C118C C118D | | | |
| C118C C118D | | | |

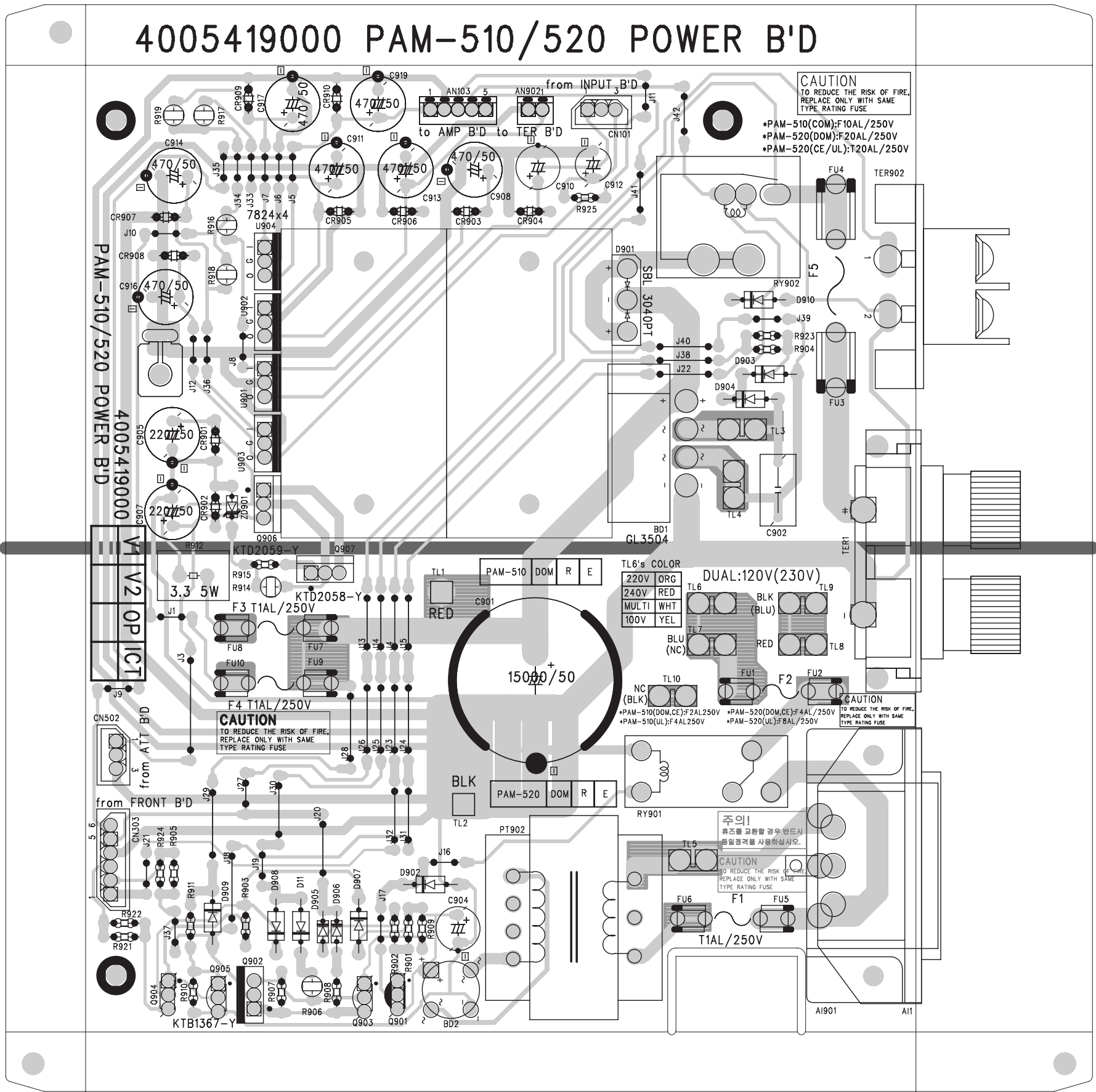
| Part No. | Part No. | Description | Value |
|---|--|---|---|
| C111A C111A1 C111B C111B1 C111C C111C1 C111D C111D1 C114A C114B C114C C114D | 3509121130-T | CAP,CE,TEMP,SL,120pF,50V,J,RA,TA | 120P |
| C131E C131F C134E C134F C137E C137F | 3509472530-T 3529470311-A | CAP,CE,HI-DI,Y5V,4700pF,50V,Z,RA,TA CAP,CE,TEMP,SL,47pF,50V,J,AX,TA | 4700P 47P |
| C152 C155 AN2 AN1 CN102 JK101-104 JK107-108 JK109 JK105 SW101-105 SPK RLY101 BK1-2 | 3539103521-A 4355763609 4355822007 4428594911 4438090310 4438192910 4438194510 4438194610 4628991710 5008984400 5528006100 6505955520 | CAP,CE,SEMI,Y5V,0.01uF,50V,Z,AX,TA CON ASS'Y,FL,3P,5264,BH0640,190MM CON ASS'Y,FL,2P,5264,5395,150mm LA5268/LAB0640/2.5MM-11P JACK,COMBO,1U,6P,ST JACK,PHONE,1U,5P,ST JACK,RCA,2U,2P,2/ST JACK,PIN,4U,4P,2/ST SW,PUSH,VER,DPDT,NS,1U,L12.5 SPEAKER,UNIT,FULL,1",8OHM,3W RELAY,DPST,24V,3A,125V,842 PCB BKT MX-400 | 0.01U ASS'Y-03P ASS'Y-02P LA5268-11P COMBO09P PHONE05P RCA02P RCA04P SPEC122SC011 3W DC 24V BRACKET |
| TERMINAL B'D (4005419110) | | | |
| JP113-132 D1-3 R201-202 R207-209 R557-558 R203-204 R206 R205 CR203 CR2-3 ZD1 C204 C201-203 C205-207 C1-3 C541 C548-549 U4 C201 CN601 CN305 CN902 JK1 TER202 TER203 TER204 BK3 | 1508400501 2058304100 3009103973 3009123973 3009243973 3529560311-A 3539102231-A 2058502056 3409222071-T 3409247071-T 3509103530-T 3509104530-T 3509472950-T 3609224122-T 2118010590 4355933806 4428592513 4428595002 4438192010 4465997604 4465997606 4465998210 6505956710 | JUMPER WIRE,0.5/52M/M DIODE,SW,100mA,75V,1N4148M,DO-34M,TA RES,MF,10K,1/5W,5%,AX N,TA RES,MF,12K,1/5W,5%,AX N,TA RES,MF,24K,1/5W,5%,AX N,TA CAP,CE,TEMP,SL,56pF,50V,J,AX,TA CAP,CE,SEMI,Y5P,1000pF,50V,K,AX,TA DIODE,ZN,500mW,BM,5.6V,DO-35,TA CAP,E,SM,SG,85C,22uF,50V,M,5P,TA CAP,E,SM,SG,85C,47uF,50V,M,6P,TA CAP,CE,HI-DI,Y5V,0.01uF,50V,Z,RA,TA CAP,CE,HI-DI,Y5V,0.1uF,50V,Z,RA,TA CAP,CE,HI-DI,Y5V,4700pF,500V,Z,RA,TA CAP,FILM,POLYESTR,SM,0.22uF,100V,J,TA IC,OP AMP,NJM4558D,DIP8 CONNECTOR WAFER 06P(J,ST) CON WAFER,BOX(M),14P,2/ST CON WAFER,BOX(M),2P,ST JACK,DSUB(F),1U,15P,ST TERMINAL,SCREW,4P,10mm,2/ST TERMINAL,SCREW,6P,10mm,2/ST TERMINAL(250)PCB TAB PCB BKT IM-1000 | JUMPER 1N4148 10K 12K 24K 56P 1000P 5.6BM 22/50 47/50 0.01U 0.1U 4700P500 0.22/100(M) 4558D LW1143-06P TPH1419-14P LW5267-02P D-SUB15P TERMINAL04P TERMINAL06P 250T BRACKET |
| MONITOR B'D (4005419120) | | | |
| CN703 AN702 SW701 | 4428594903 4428595002 4618999900 | CON WAFER,BOX(M),3P,AN CON WAFER,BOX(M),2P,ST SW,SLIDE,VER,2P3T,NS,L9 | LA5268-03P LW5267-02P SS65010 |
| FRONT B'D (4005419200) | | | |
| J1-147 J149-172 J200 J300 Q316 Q501 Q301-304 Q201 Q305-314 Q317-318 Q320 Q315A Q315B Q315C Q315D Q315E Q315F D501 D301-303 D306-321 ZD501 ZD301 U507 U504 U560 U301-306 LD304-306 LD318-319 LD315A LD315B LD315C LD315D LD315E LD315F LD301-302 LD316-317 | 1508400501 2008407970-T 2008606101-T 2008606105-T 2008606108-T 2008613000-T 2058100996 2058304100 2058502056 2058502100 2118009700 2118010590 2128740208 2168220989 2300030100 | JUMPER WIRE,0.5/52M/M TR,SG,NPN,800mA,120V,KTC1027,TO-92L,TA TR,SG,NPN,150mA,50V,KTC3198L/BL,TO-92,TA TR,SG,PNP,150mA,50V,KTA1266Y,TO-92,TA TR,SG,NPN,100MA,120V,KTC3200BL,TO-92,TA TR,SG,NPN,700mA,50V,2SD1111-AA DIODE,RE,1A,800V,1N4006,DO-41,TA DIODE,SW,100mA,75V,1N4148M,DO-34M,TA DIODE,ZN,500mW,BM,5.6V,DO-35,TA DIODE,ZN,500MW,BM,12V,DO-35,TA IC,TONE RINGER,GL6840A,DIP8 IC,OP AMP,NJM4558D,DIP8 IC CHIME BT8040N IC,OP AMP,NJM2068L,SIP8 LED,RND 3.1MM,RED,DIF,1U,ST2.5 | JUMPER KTC1027-Y KTC3198L-BL KTA1266-Y KTC3200-BL 2SD1111 1N4006 1N4148 5.6BM 12BM GL6840A 4558D BXA4240 2068L LTL-1CHE LTL-1CHY |

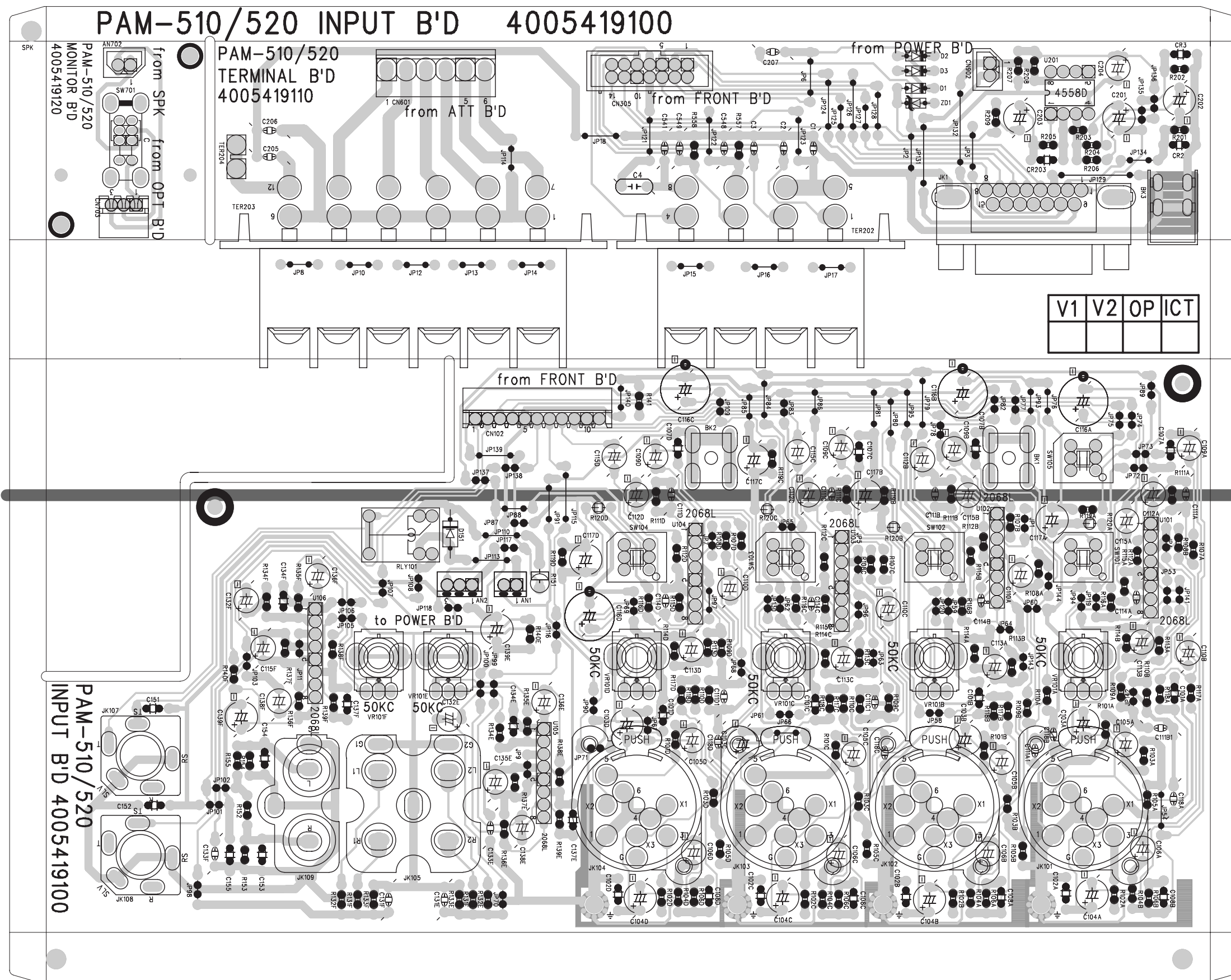
| Part No. | Part No. | Description | Value |
|----------------------|--------------|---|---------------|
| R389 | 3039200575-T | RES,MF,20,2W,5%,RA R,TA | 20 2W |
| R318 | 3039471575-T | RES,MF,470,2W,5%,RA R,TA | 470 2W |
| R509 | 3039821575-T | RES,MF,820,2W,5%,RA R,TA | 820 2W |
| R527 | 3089470275 | RES,FS,MF,47,1/4W,5%,RA R,TA | FR 47 |
| VR312 | 3228010320 | VR,ROT,VER,1U,L20,10K,A | 10KA |
| VR311 VR313-314 | 3228010320 | VR,ROT,VER,1U,L20,10K,A | 10KA |
| VR303A VR303B | 3228010330 | VR,ROT,VER,1U,L25,10K,A | 10KA |
| VR303C VR303D | | | |
| VR303E VR303F | | | |
| VR301A VR301B | 3228050320 | VR,ROT,VER,1U,L20,50K,B | 50KB |
| VR301C VR301D | | | |
| VR301E VR301F | | | |
| VR302A VR302B | | | |
| VR302C VR302D | | | |
| VR302E VR302F | | | |
| C313 | 3409210071-T | CAP,E,SM,SG,85C,10uF,50V,M,5P,TA | 10/50 |
| C305A C305B | | | |
| C305C C305D | | | |
| C305E C305F | | | |
| C309A C309B | | | |
| C309C C309D | | | |
| C309E C309F | | | |
| C508 C515 C517 | 3409210971-T | CAP,E,SM,SG,85C,1uF,50V,M,5P,TA | 1/50 |
| C306A C306B | | | |
| C306C C306D | | | |
| C306E C306F | | | |
| C506 C538 | 3409222071-T | CAP,E,SM,SG,85C,22uF,50V,M,5P,TA | 22/50 |
| C317 | 3409222141-T | CAP,E,SM,SG,85C,220uF,25V,J,8P,TA | 220/25 |
| C501 | 3409233971-T | CAP,E,SM,SG,85C,3.3uF,50V,M,5P,TA | 3.3/50 |
| C310-311 | 3409247071-T | CAP,E,SM,SG,85C,47uF,50V,M,6P,TA | 47/50 |
| C314-316 C322 | | | |
| C502 C509 C519 | | | |
| C307A C307C | | | |
| C307E C312A | | | |
| C312C C312E | | | |
| C503-504 | 3409247971-T | CAP,E,SM,SG,85C,4.7uF,50V,M,5P,TA | 4.7/50 |
| C308A C308B | | | |
| C308C C308D | | | |
| C308E C308F | | | |
| C510-511 | 3409247991-T | CAP,E,SM,SG,85C,4.7uF,100V,M,5P,TA | 4.7/100 |
| C507 | 3509102530-T | CAP,CE,HI-DI,Y5P,1000pF,50V,J,RA,TA | 1000P |
| C516 | 3509104530-T | CAP,CE,HI-DI,Y5V,0.1uF,50V,Z,RA,TA | 0.1U |
| C304A C304B | 3529470311-A | CAP,CE,TEMP,SL,47pF,50V,J,AX,TA | 47P |
| C304C C304D | | | |
| C304E C304F | | | |
| C512 C514 | 3539102231-A | CAP,CE,SEMI,Y5P,1000pF,50V,K,AX,TA | 1000P |
| C518 | 3609104120-T | CAP,FILM,POLYESTR,0.1UF,100V,J,TA | 0.1/100(M) |
| C301A C301B | 3609122120-T | CAP,FILM,POLYESTR,0.0012UF,100V,J,TA | 0.0012/100 |
| C301C C301D | | | |
| C301E C301F | | | |
| C505 | 3609153120-T | CAP,FILM,POLYESTR,0.015uF,100V,J,TA | 0.015/100 |
| C319 | 3609183120-T | CAP,FILM,POLYESTR,0.018uF,100V,J,TA | 0.018/100(M) |
| C320 | 3609222120-T | CAP,FILM,POLYESTR,0.0022uF,100V,J,TA | 0.0022/100(M) |
| C321 | 3609223120-T | CAP,FILM,POLYESTR,0.022uF,100V,J,TA | 0.022/100(M) |
| C302A C302B | 3609333120-T | CAP,FILM,POLYESTR,0.033UF,100V,J,TA | 0.033/100 |
| C302C C302D | | | |
| C302E C302F | | | |
| C303A C303B | | | |
| C303C C303D | | | |
| C303E C303F | | | |
| C318 | 3609822120-T | CAP,FILM,POLYESTR,0.0082uF,100V,J,TA | 0.0082/100(M) |
| AN501 | 4353981013 | CON ASS'Y,FL,4P,5395,5264,270mm | ASSY'-04P |
| AN102 | 4355004518 | CON ASS'Y,FL,11P,5264,BH0640,420MM | ASSY'-11P |
| AN307 | 4355004600 | CON ASS'Y,FL,7P,5264,BH0640,60MM | ASSY'-07P |
| AN302 | 4355004700 | CON ASS'Y,RB,14P,IDC2.54,DIP2.54,60MM | ASSY'-14P |
| AN305 | 4355004717 | CON ASS'Y,RB,14P,IDC2.54,DIP2.54,390MM | ASSY'-14P |
| AN303 | 4355755513 | CON ASS'Y,FL,6P,5264,BH0640,270MM | ASSY'-06P |
| AN304 | 4355848625 | 4P CONNECTOR ASS'Y | ASSY'-04P |
| SW301 | 4628978400 | SW,PUSH,VER,DPDPT,NS,1U,L5.7 | JPS2281NEAB |
| SW302-311 | 4628980110 | SW,PUSH,VER,DPDPT,NS,1U,L5.7 | JPS2281EAB |
| AMP B'D (4005419300) | | | |
| J1-25 | 1508400501 | JUMPER WIRE,0.5/52MM | JUMPER |
| J27-31 | | | |
| J35-40 | | | |
| J42-46 | | | |
| J48-53 | | | |
| Q2 Q27 | 2008407970-T | TR,SG,NPN,800mA,120V,KTC1027,TO-92L,TA | KTC1027-Y |
| Q4-5 | 2008606107-T | TR,SW,NPN,150mA,50V,KTC3206,TO-92L,TA | KTC3206-Y |
| Q1 Q8 Q32 | 2008606108-T | TR,SG,NPN,100MA,120V,KTC3200BL,TO-92,TA | KTC3200-BL |
| Q9-10 | 2008606999-T | TR,SG,NPN,150mA,50V,KTC3198BL,TO-92,TA | KTC3198-BL |
| Q20-26 Q31 | | | |

| Part No. | Part No. | Description | Value |
|-------------|--------------|---------------------------------------|--------------|
| Q3 Q19 | 2028406113 | TR,PW,NPN,3A,60V,KTD2058,TO-220AB | KTD2058-Y |
| Q6-7 | 2028407990 | TR,PW,NPN,1.5A,180V,KTC4370A,TO-220IS | KTC4370A-Y |
| Q11-18 | 2028443880 | TR,PW,NPN,15V,180V,2SC3856,TO-3P(N) | 2SC3856 |
| D6 D12 D17 | 2058100996 | DIODE,RE,1A,800V,1N4006,DO-41,TA | 1N4006(4007) |
| D1-5 D8-9 | 2058304100 | DIODE,SW,100mA,75V,1N4148M,DO-34M,TA | 1N4148 |
| ZD2 | 2058502068 | DIODE,ZN,500mW,BM,6.8V,DO-35,TA | 6.8BM |
| ZD10 | 2058502082 | DIODE,ZN,500mW,BM,8.2V,DO-35,TA | 8.2BM |
| ZD3 ZD5-8 | 2058502120 | DIODE,ZN,500MW,BM,12V,DO-35,TA | 12BM |
| ZD11 | | | |
| ZD9 | 2058502160 | DIODE,ZN,500MW,BM,16V,DO-35,TA | 16BM |
| ZD4 | 2058502220 | DIODE,ZN,500MW,BM,22V,DO-35,TA | 22BM |
| U11-12 | 2118010590 | IC,OP AMP,NJM4558D,DIP8 | 4558D |
| U1 | 2128610500 | IC,VOLT REG,12V,1A,MC7812CTG,TO-220AB | 7812 |
| U13-15 | 2168220991 | IC,OP AMP,NJM4558L,SIP8 | 4558L |
| TH1-2 | 2438209011 | THERMIST,NTC,500mW,50Kohm,130C | YSG-503J |
| IPT1 | 2808098300 | TRANS,IPT,150ohm,515/515ohm | IPT |
| R51-52 | 3002100953 | RES,MF,10K,1/5W,1%,AX N,TA | 10K 1% |
| R73 | 3002330953 | RES,MF,33K,1/5W,1%,AX N,TA | 33K 1% |
| R56 | 3003220953 | RES,MF,2.2K,1/5W,1%,AX N,TA | 2.2K 1% |
| R61 | 3003330953 | RES,MF,3K,1/5W,1%,AX N,TA | 3K 1% |
| R78-77 | 3003330953 | RES,MF,3.3K,1/5W,1%,AX N,TA | 3.3K 1% |
| R59 | 3003470953 | RES,MF,4.7K,1/5W,1%,AX N,TA | 4.7K 1% |
| R58 R74 | 3003820953 | RES,MF,8.2K,1/5W,1%,AX N,TA | 8.2K 1% |
| R50 | 3003909953 | RES,MF,9.09K,1/5W,1%,AX N,TA | 9.09K 1% |
| R71 | 3009101973 | RES,MF,100,1/5W,5%,AX N,TA | 100 |
| R49 R65 R72 | 3009102973 | RES,MF,1K,1/5W,5%,AX N,TA | 1K |
| R3 R7-8 | 3009103973 | RES,MF,10K,1/5W,5%,AX N,TA | 10K |
| R10 R13 | | | |
| R17-18 R60 | | | |
| R66 R79 | | | |
| R5-6 R48 | 3009104973 | RES,MF,100K,1/5W,5%,AX N,TA | 100K |
| R64 | | | |
| R28 R43 R46 | 3009151973 | RES,MF,150,1/5W,5%,AX N,TA | 150 |
| R75 | 3009153973 | RES,MF,15K,1/5W,5%,AX N,TA | 15K |
| R9 | 3009182973 | RES,MF,1.8K,1/5W,5%,AX N,TA | 1.8K |
| R19 R81 | 3009183973 | RES,MF,18K,1/5W,5%,AX N,TA | 18K |
| R14 | 3009202973 | RES,MF,2K,1/5W,5%,AX N,TA | 2K |
| R12 R38-39 | 3009203973 | RES,MF,20K,1/5W,5%,AX N,TA | 20K |
| R24-25 | 3009220973 | RES,MF,22,1/5W,5%,AX N,TA | 22 |
| R41 R45 | 3009271973 | RES,MF,270,1/5W,5%,AX N,TA | 270 |
| R22-23 R57 | 3009330973 | RES,MF,33,1/5W,5%,AX N,TA | 33 |
| R70 | 3009333973 | RES,MF,33K,1/5W,5%,AX N,TA | 33K |
| R62 | 3009431973 | RES,MF,430,1/5W,5%,AX N,TA | 430 |
| R42 R44 | 3009471973 | RES,MF,470,1/5W,5%,AX N,TA | 470 |
| R29 R67 | 3009472973 | RES,MF,4.7K,1/5W,5%,AX N,TA | 4.7K |
| R16 R78 | 3009473973 | RES,MF,47K,1/5W,5%,AX N,TA | 47K |
| R85-87 | | | |
| R30 | 3009561973 | RES,MF,560,1/5W,5%,AX N,TA | 560 |
| R2 R4 | 3009562973 | RES,MF,5.6K,1/5W,5%,AX N,TA | 5.6K |
| R37 R40 | 3009681973 | RES,MF,680,1/5W,5%,AX N,TA | 680 |
| R1 R53-55 | 3009682973 | RES,MF,6.8K,1/5W,5%,AX N,TA | 6.8K |
| R63 | | | |
| R20-21 | 3009752973 | RES,MF,7.5K,1/5W,5%,AX N,TA | 7.5K |
| R15 | 3023124953 | RES,MF,1.24K,1/5W,1%,AX N,TA | 1.24K 1% |
| R88 | 3039100575-T | RES,MF,10,2W,5%,RA R,TA | 10 2W |
| R26-27 | 3039102575-T | RES,MF,1K,2W,5%,RA R,TA | 1K 2W |
| R47 R80 | 3039200575-T | RES,MF,20,2W,5%,RA R,TA | 20 2W |
| R68 | 3039221575-T | RES,MF,220,2W,5%,RA R,TA | 220 2W |
| R82 | 3039470575-T | RES,MF,47,2W,5%,RA R,TA | 47 2W |
| R11 | 3039680575-T | RES,MF,68,2W,5%,RA R,TA | 68 2W |
| R31-36 | 3059228674 | RES,CE,WWW,0.22,3W,5% | 0.22 3W |
| R83-84 | | | |
| R69 | 3089821275 | RES,FS,MF,820,1/4W,5%,RA R,TA | FR 820 |
| VR1-2 | 3248510120-T | RES SEMI FT-63 TP(100) | 100 |
| C3-4 | 3409210071-T | CAP,E,SM,SG,85C,10uF,50V,M,5P,TA | 10/50 |
| C18-19 | | | |
| C24 C29 C32 | | | |
| C12 | 3409210141-T | CAP,E,SM,SG,85C,100uF,25V,M,6P,TA | 100/25 |
| C2 C25 | 3409210971-T | CAP,E,SM,SG,85C,1uF,50V,M,5P,TA | 1/50 |
| C35 | 3409222971-T | CAP,E,SM,SG,85C,2.2uF,50V,M,5P,TA | 2.2/50 |
| C21 | 3409233071-T | CAP,E,SM,SG,85C,33uF,50V,M,6P,TA | 33/50 |
| C7 C10-11 | 3409247071-T | CAP,E,SM,SG,85C,47uF,50V,M,6P,TA | 47/50 |
| C28 C33 | | | |
| C9 C20 | 3409247971-T | CAP,E,SM,SG,85C,4.7uF,50V,M,5P,TA | 4.7/50 |
| C22-23 C30 | | | |
| C26 | 3501221230-T | CAP,CE,HI-DI,Y5P,220pF,50V,K,RA,TA | 220P |
| C13 | 3509101231-A | CAP,CE,HI-DI,Y5P,100pF,50V,K,AX,TA | 100P |
| C6 | 3509121231-A | CAP,CE,HI-DI,Y5P,120pF,50V,K,AX,TA | 120P |
| C14-15 | 3509471231-A | CAP,CE,HI-DI,Y5P,470pF,50V,K,AX,TA | 470P |
| C5 | 3529050311-A | CAP,CE,TEMP,SL,5pF,50V,C,AX,TA | 5P |
| C34 | 3529100311-A | CAP,CE,TEMP,SL,10pF,50V,J,AX,TA | 10P |

| Part No. | Part No. | Description | Value |
|--------------------------|--------------|---|--------------|
| C1 | 3539102231-A | CAP,CE,SEMI,Y5P,1000pF,50V,K,AX,TA | 1000P |
| C16-17 | 3539332331-A | CAP,CE,SEMI,Y5P,3300pF,16V,M,AX,TA | 3300P16 |
| C8 C27 | 3609103120-T | CAP,FILM,POLYESTR,0.01UF,100V,J,TA | 0.01/100(M) |
| C31 | 3609104120-T | CAP,FILM,POLYESTR,0.1UF,100V,J,TA | 0.1/100(M) |
| CN1 CN4 | 4428595002 | CON WAFER,BOX(M),2P,ST | LW5267-02P |
| CN602 | 4428595003 | CON WAFER,BOX(M),3P,ST | LW5267-03P |
| CN304 | 4428595004 | CON WAFER,BOX(M),4P,ST | LW5267-04P |
| CN103 | 4428595005 | CON WAFER,BOX(M),5P,ST | LW5267-05P |
| TER1-2 | 4465998210 | TERMINAL(250)PCB TAB | 250T |
| TP11-14 | 4678699411 | CNT PLUG 1P | CNT-01P |
| RLY1 | 5528006200 | RELAY,DPST,12V,10A,250V,894HN | DC 12V |
| ATT B'D (4005419400) | | | |
| JP1-2 | 1508400501 | JUMPER WIRE,0.5/52MM | JUMPER |
| Q401-402 | 2008606999-T | TR,SG,NPN,150mA,50V,KTC3198BL,TO-92,TA | KTC3198-BL |
| Q404-406 Q408 | | | |
| Q409 | 2008613000-T | TR,SG,NPN,700mA,50V,2SD1111-AA | 2SD1111 |
| Q403 Q407 | 2008613955-T | TR,SG,PNP,100mA,50V,DTA124ES,TO-92M,TA | DTA124ES |
| D403 D601-606 | 2058100996 | DIODE,RE,1A,800V,1N4006,DO-41,TA | 1N4006 |
| D611 | 2058100996 | DIODE,RE,1A,800V,1N4006,DO-41,TA | 1N4006(4007) |
| D401-402 | 2058304100 | DIODE,SW,100mA,75V,1N4148M,DO-34M,TA | 1N4148 |
| ZD502 | 2058502043 | DIODE,ZN,500mW,BM,4.3V,DO-35,TA | 4.3BM |
| U611 | 2128770101 | IC EM57P300AP (KOREAN) | EM57P300AP |
| U601-605 | 2168220991 | IC,OP AMP,NJM4558L,SIP8 | 4558L |
| R411 R419 R617 | 3009100973 | RES,MF,10,1/5W,5%,AX N,TA | 10 |
| R635 R639 R641 | | | |
| R665 | | | |
| R645 R650-651 | 3009102973 | RES,MF,1K,1/5W,5%,AX N,TA | 1K |
| R424 R426-427 | 3009103973 | RES,MF,10K,1/5W,5%,AX N,TA | 10K |
| R622 R644 R659 | | | |
| R662-664 | | | |
| R410 R418 | 3009104973 | RES,MF,100K,1/5W,5%,AX N,TA | 100K |
| R405 | 3009106973 | RES,MF,10M,1/5W,5%,AX N,TA | 10M |
| R619 R646 | 3009123973 | RES,MF,12K,1/5W,5%,AX N,TA | 12K |
| R626 R636 | 3009133973 | RES,MF,13K,1/5W,5%,AX N,TA | 13K |
| R409 R417 R612 | 3009153973 | RES,MF,15K,1/5W,5%,AX N,TA | 15K |
| R623 R625 | | | |
| R631 | | | |
| R656 | 3009182973 | RES,MF,1.8K,1/5W,5%,AX N,TA | 1.8K |
| R630 R634 R638 | 3009183973 | RES,MF,18K,1/5W,5%,AX N,TA | 18K |
| R423 R627 | 3009202973 | RES,MF,2K,1/5W,5%,AX N,TA | 2K |
| R640 | | | |
| R620 R624 | 3009203973 | RES,MF,20K,1/5W,5%,AX N,TA | 20K |
| R658 | 3009222973 | RES,MF,2.2K,1/5W,5%,AX N,TA | 2.2K |
| R613 R616 R649 | 3009223973 | RES CF 22K 1/5W J N | 22K |
| R412 R421 | 3009224973 | RES CF 220K 1/5W J N | 220K |
| R413 | 3009225973 | RES,MF,2.2M,1/5W,5%,AX N,TA | 2.2M |
| R637 R653 | 3009302973 | RES,MF,3K,1/5W,5%,AX N,TA | 3K |
| R621 | 3009303973 | RES,MF,30K,1/5W,5%,AX N,TA | 30K |
| R601-606 | 3009330973 | RES,MF,33,1/5W,5%,AX N,TA | 33 |
| R657 | 3009333973 | RES,MF,33K,1/5W,5%,AX N,TA | 33K |
| R407 R415 | 3009334973 | RES,MF,330K,1/5W,5%,AX N,TA | 330K |
| R406 R414 R654 | 3009393973 | RES,MF,39K,1/5W,5%,AX N,TA | 39K |
| R408 R416 | 3009472973 | RES,MF,4.7K,1/5W,5%,AX N,TA | 4.7K |
| R611 | 3009473973 | RES,MF,47K,1/5W,5%,AX N,TA | 47K |
| R401-404 | 3009563973 | RES,MF,56K,1/5W,5%,AX N,TA | 56K |
| R | | | |
| R628-629 | | | |
| R632-633 | | | |
| R642-643 | | | |
| R660-661 | | | |
| R655 | 3009564973 | RES,MF,560K,1/5W,5%,AX N,TA | 560K |
| R647 | 3009682973 | RES,MF,6.8K,1/5W,5%,AX N,TA | 6.8K |
| R648 | 3009752973 | RES,MF,7.5K,1/5W,5%,AX N,TA | 7.5K |
| R618 | 30098822973 | RES,MF,8.2K,1/5W,5%,AX N,TA | 8.2K |
| R425 | 3039330575-T | RES,MF,33.2W,5%,RA R,TA | 33 2W |
| VR701 | 3228066600 | VR,ROT,VER,1U,1.15,10K,B,RV16ADO-41-15F | 10KB |
| C612 C614-616 | 3409210071-T | CAP,E,SM,SG,85C,10uF,50V,M,5P,TA | 10/50 |
| C618-619 C622 | | | |
| C624 C628-629 | | | |
| C631 C635 C639 | | | |
| C644 C648 C651 | | | |
| C653 | | | |
| C601 C409 C636 C638 | 3409210971-T | CAP,E,SM,SG,85C,1uF,50V,M,5P,TA | 1/50 |
| C611 C620 C625 C633 C649 | 3409222071-T | CAP,E,SM,SG,85C,22uF,50V,M,5P,TA | 22/50 |
| C405-408 | 3409247071-T | CAP,E,SM,SG,85C,47uF,50V,M,6P,TA | 47/50 |
| C413-416 C613 | | | |
| C623 C627 C632 C645 C654 | | | |
| C655-657 | 3409247971-T | CAP,E,SM,SG,85C,4.7uF,50V,M,5P,TA | 4.7/50 |

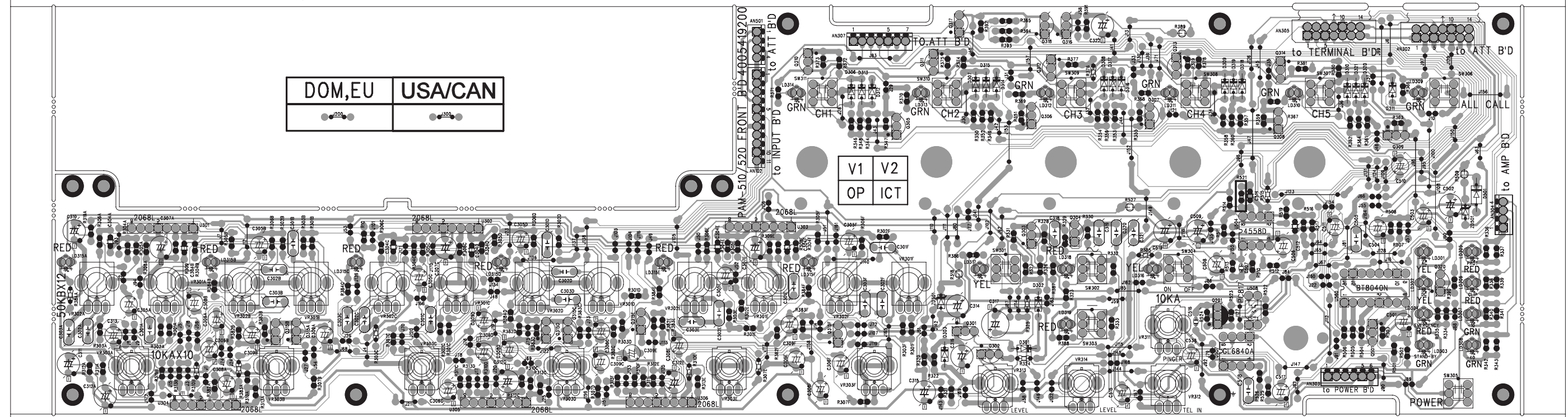
TOP AND BOTTOM VIEW OF P.C.BOARD



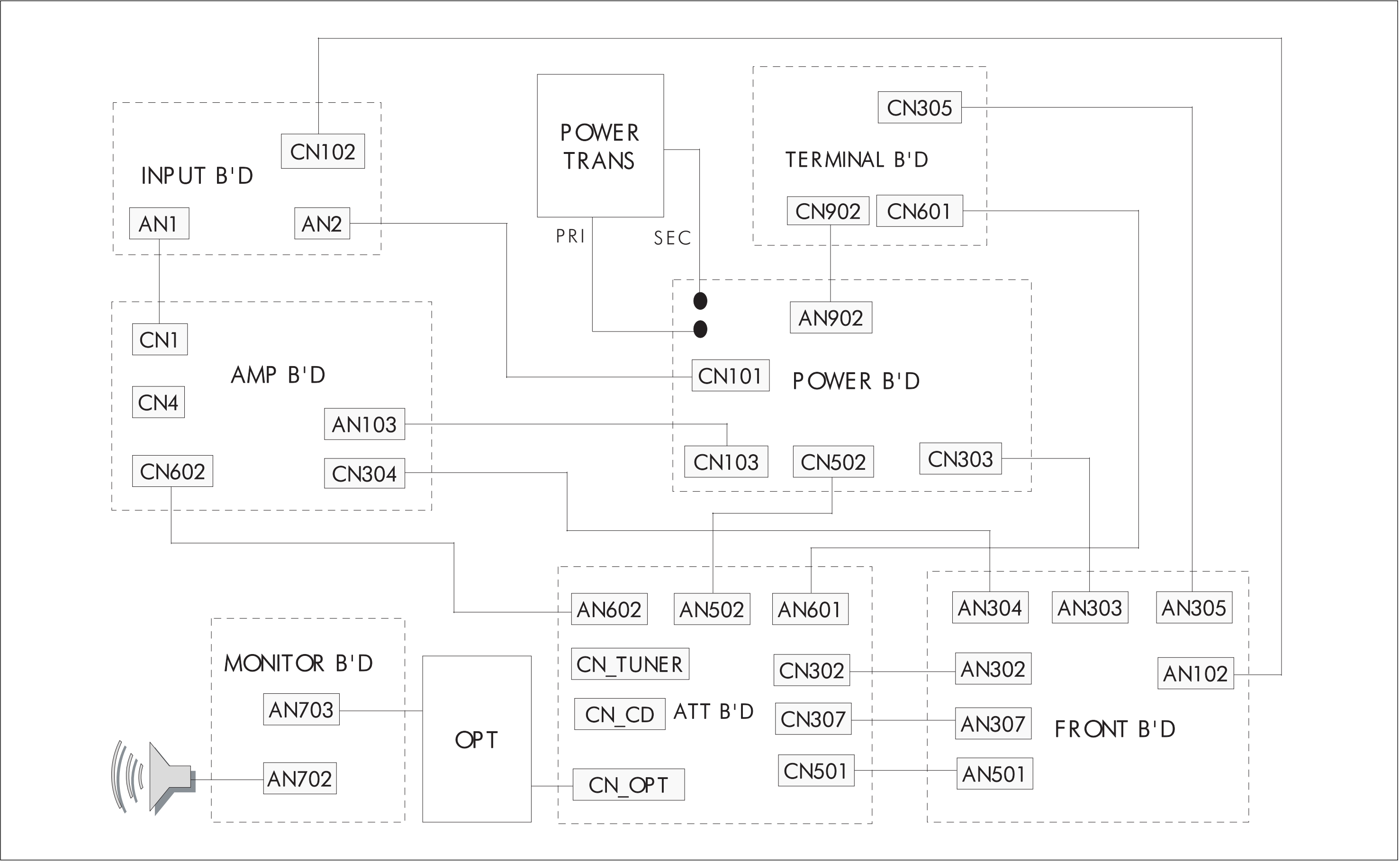


PAM-510/520 FRONT B'D 4005419200

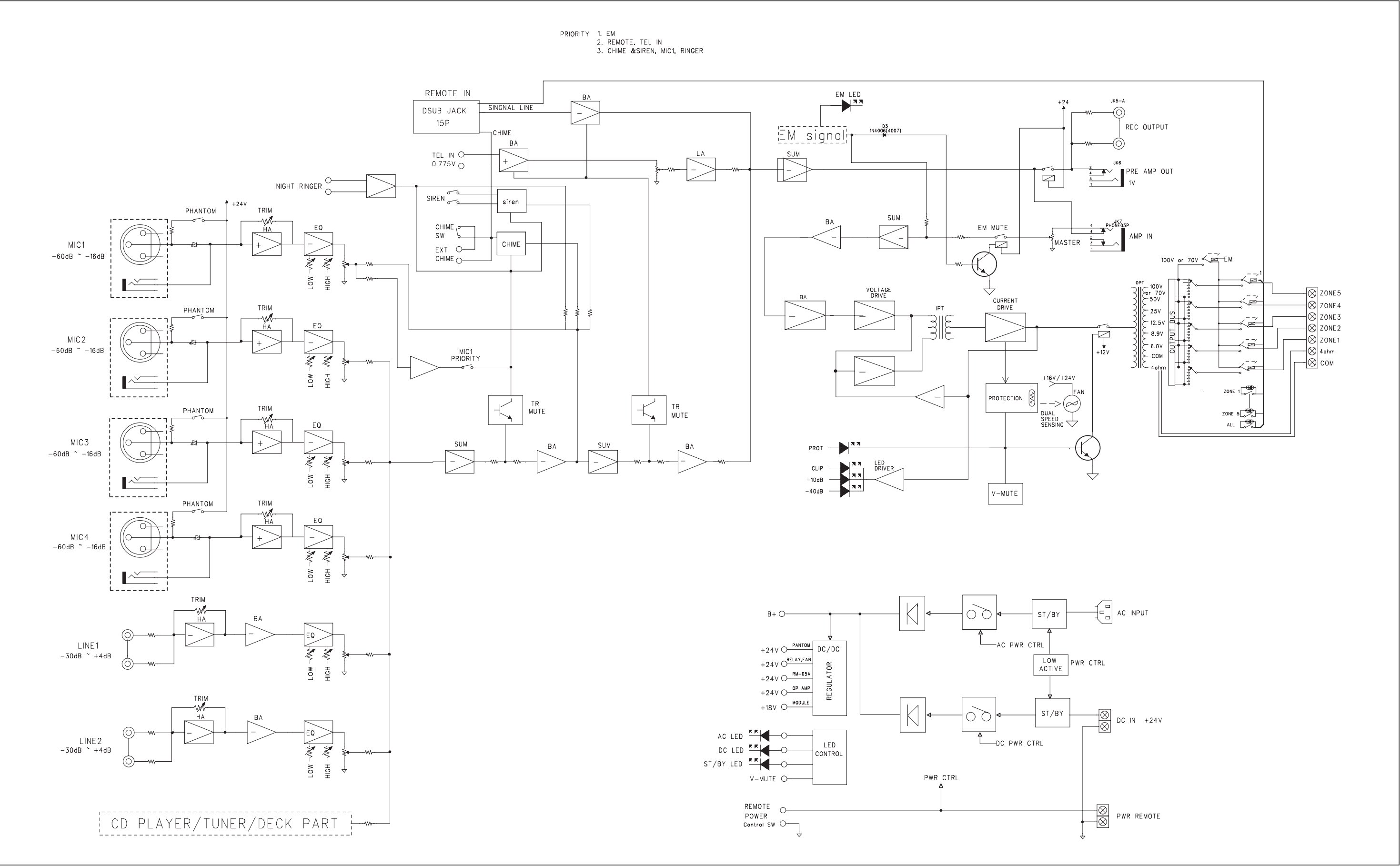
| DOM,EU | USA/CAN |
|---|---|
|  |  |



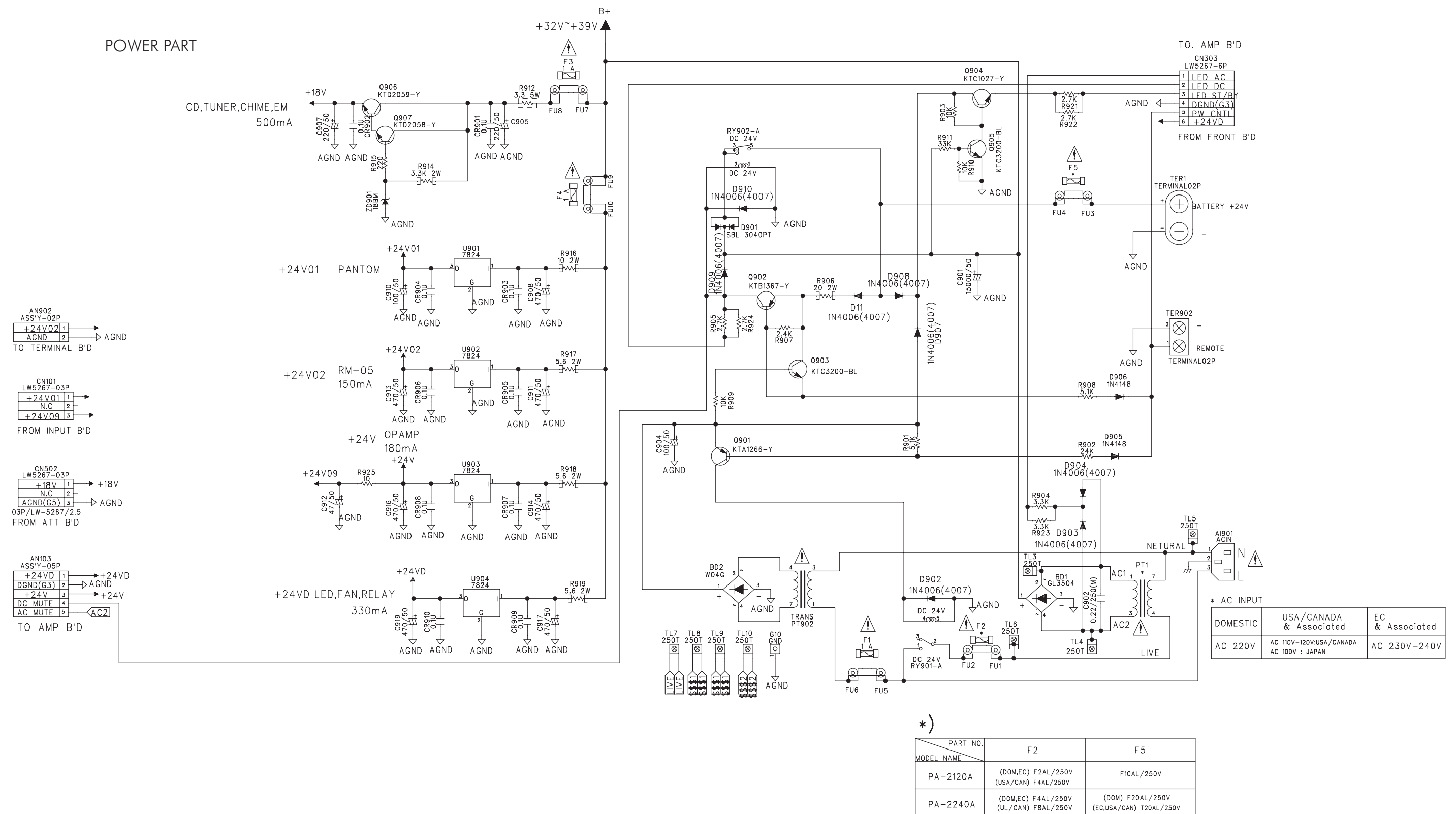


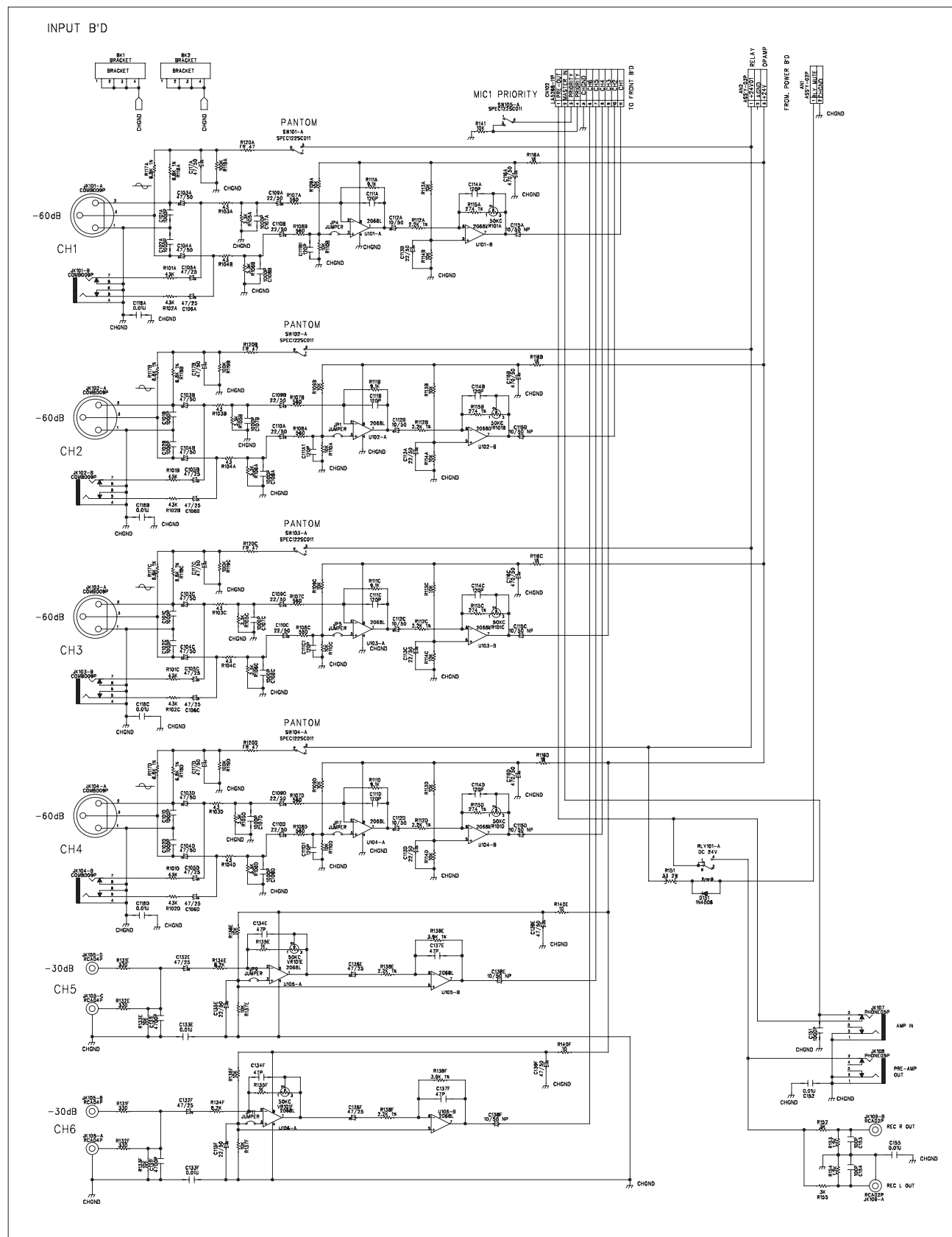


BLOCK DIAGRAM

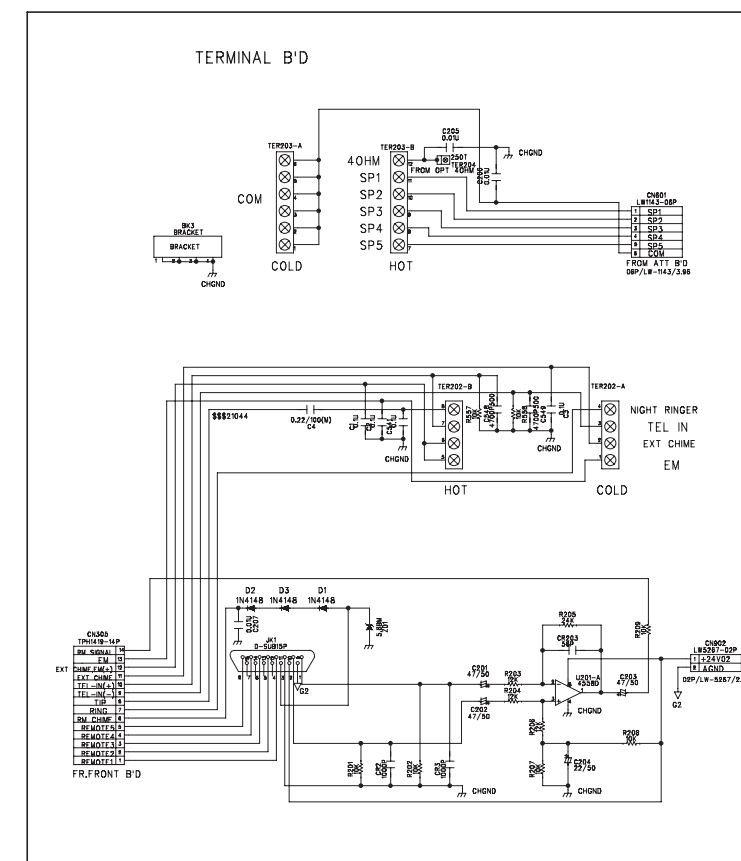
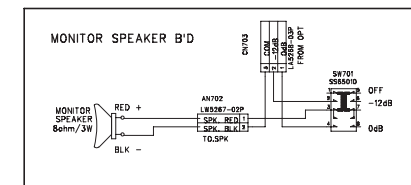


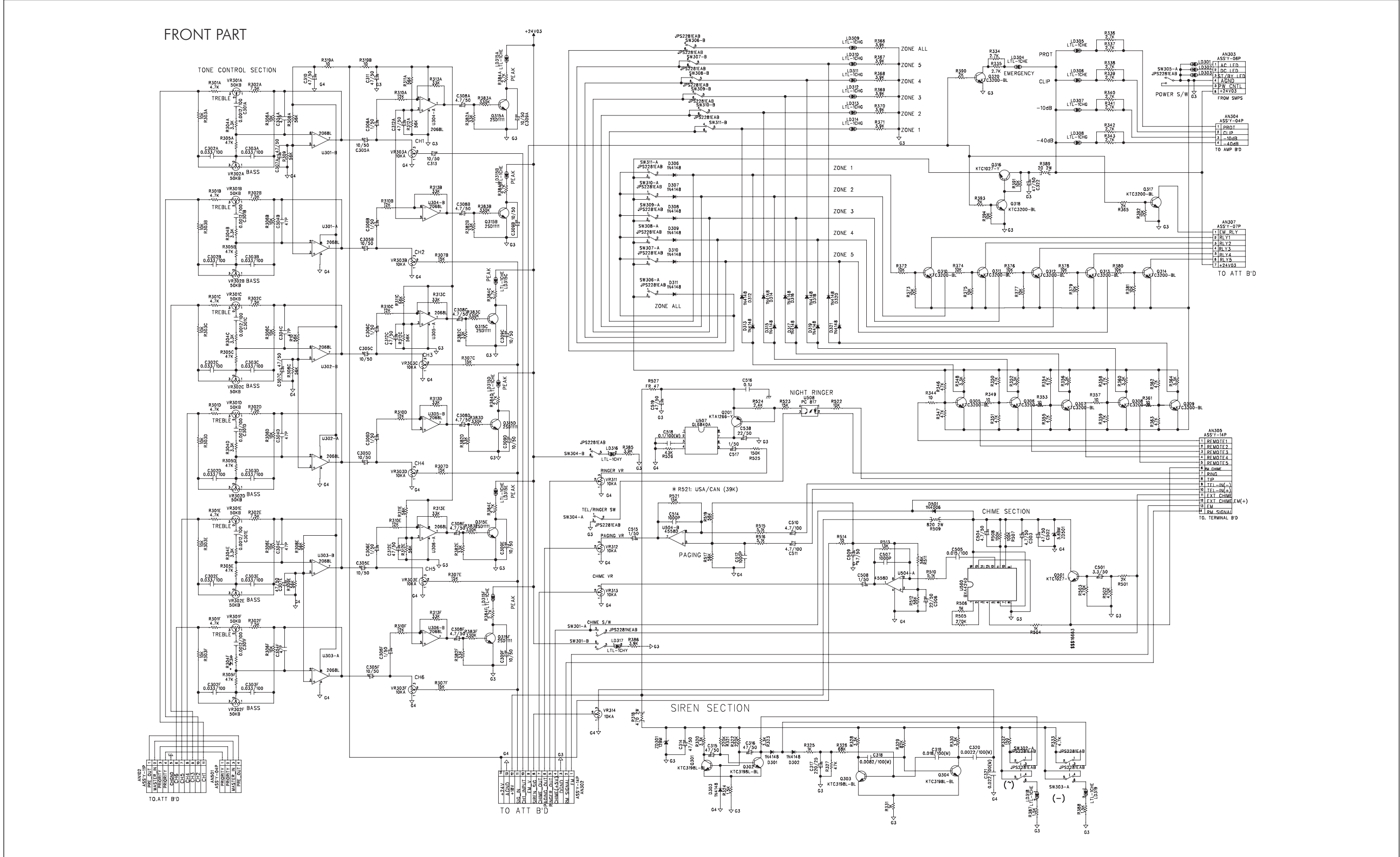
SCHEMATIC DIAGRAM

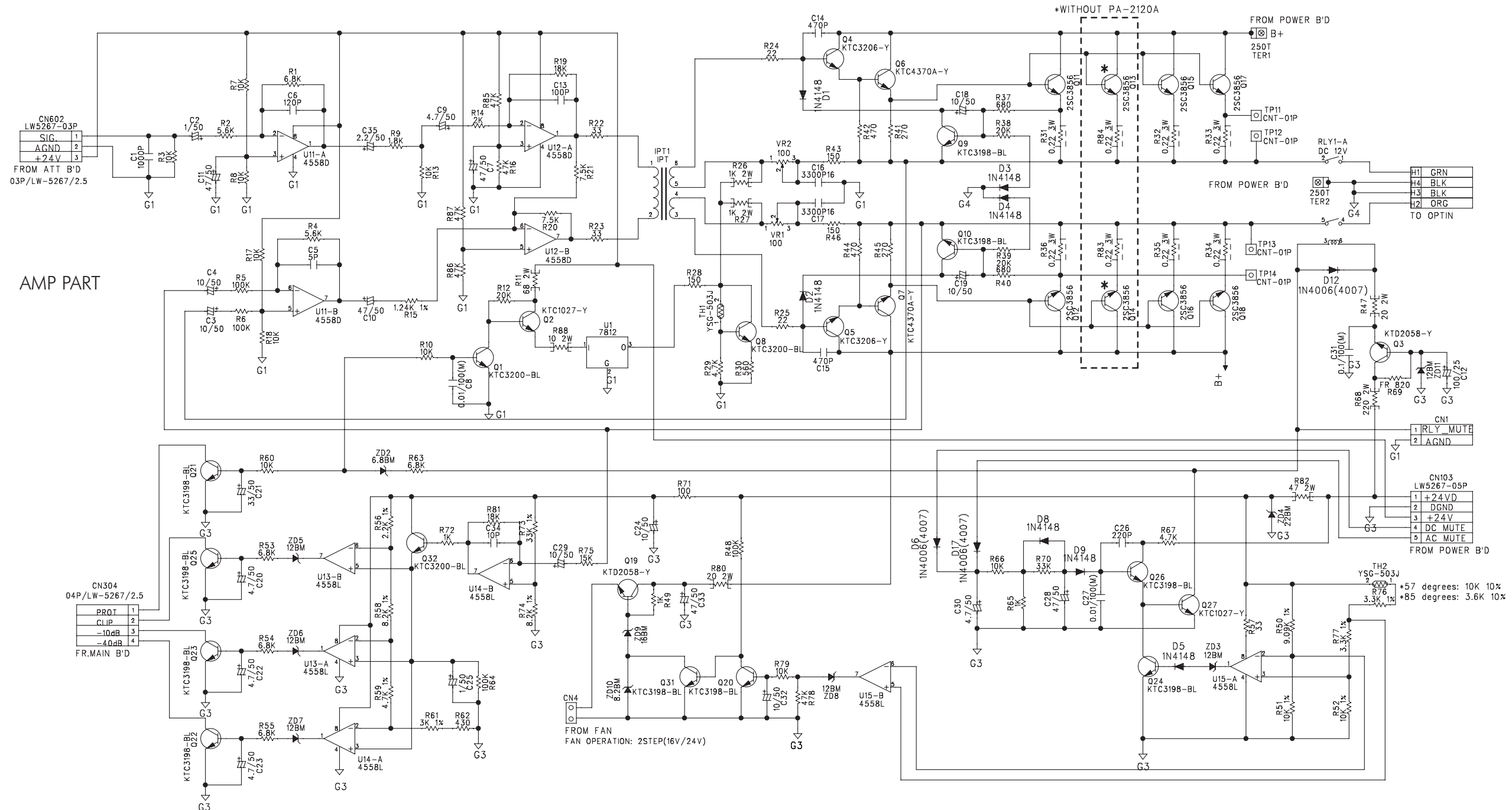




INPUT PART

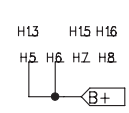




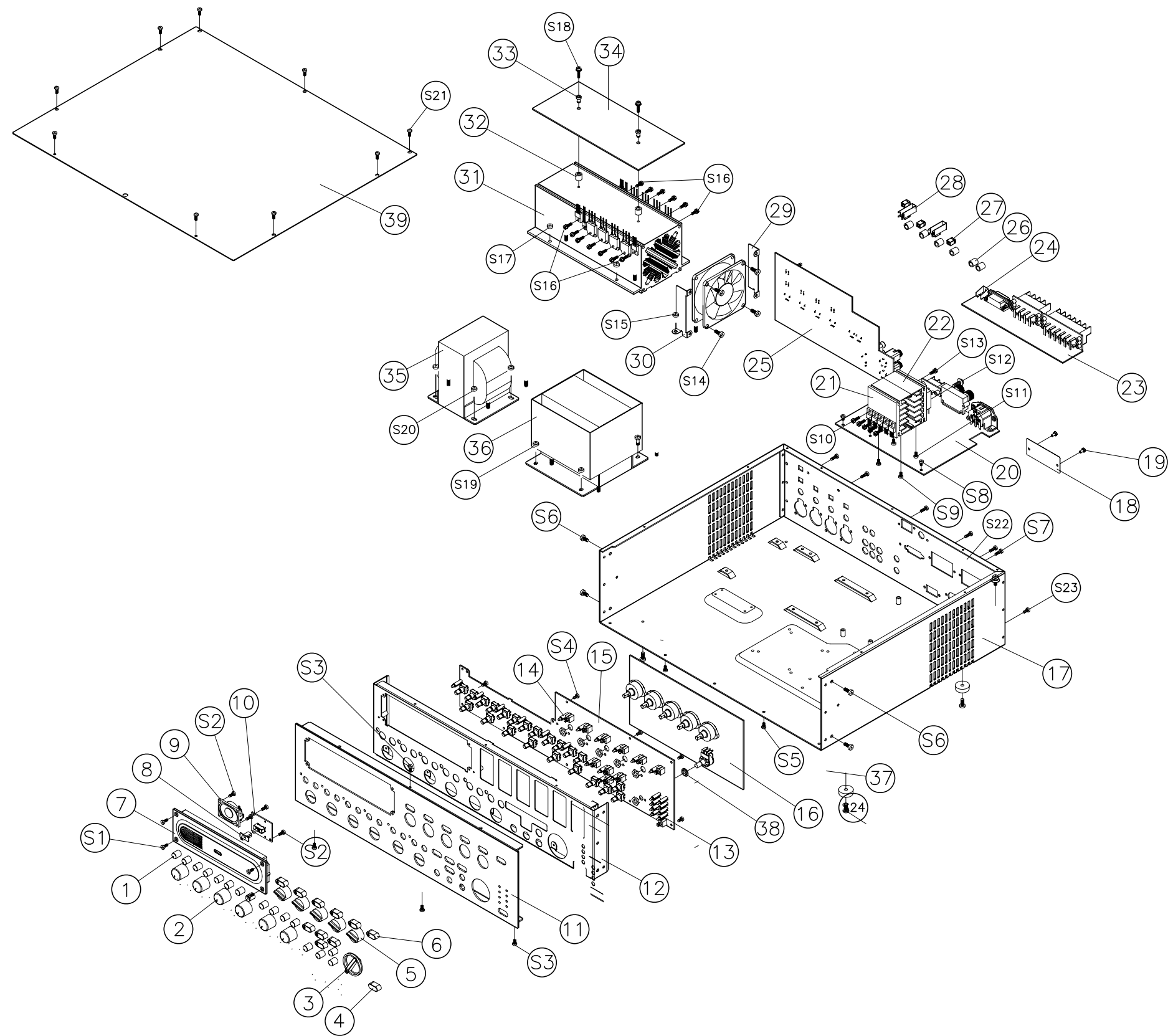


*)

| PART NO. | Q13, Q14 | R1 | R37, R40 | R75 |
|------------|----------|------|----------|-----|
| MODEL NAME | Q13, Q14 | R1 | R37, R40 | R75 |
| PAM-510 | NOT USED | 6.8K | 680 | 15K |
| PAM-520 | 2SC3856 | 8.2K | 1K | 22K |



EXPLODED VIEW OF CABINET & CHASSIS / MECANICAL PARTLIST



| | | | | |
|-----|----------------------|-------------|----|--|
| S25 | | | | |
| S24 | SCREW 3BTC 4X8B | 8109340083R | 4 | |
| S23 | SCREW BM 3X8B | 8009130083R | 2 | |
| S22 | SCREW WSAM 4X6N | 8159440064R | 1 | |
| S21 | DOT SCREW 2BTC 3X8B | 8095996510R | 9 | |
| S20 | SCREW 3BTC 4X8B | 8109340083R | 4 | |
| S19 | SCREW 3BTC 4X8B | 8109340083R | 4 | |
| S18 | ASS'Y SCREW PM 3X22B | 8095997110R | 2 | |
| S17 | SCREW 3BTC 4X8B | 8109340083R | 4 | |
| S16 | HEX MSPM 3X12Y | 8099130121R | 13 | |
| S15 | SCREW 3BTC 4X8B | 8109340083R | 2 | |
| S14 | SCREW BM 4X10B | 8009140103R | 4 | |
| S13 | HEX MSPM 3X12Y | 8099130121R | 1 | |
| S12 | ASS'Y SCREW PM 4X18B | 8095996930R | 1 | |
| S11 | DOT SCREW 2BTC 3X8B | 8095996510R | 2 | |
| S10 | HEX MSPM 3X12Y | 8099130121R | 5 | |
| S9 | DOT SCREW 2BTC 3X8B | 8095996510R | 2 | |
| S8 | SCREW 3BTC 3X6N | 8109330064R | 4 | |
| S7 | DOT SCREW 2BTC 3X8B | 8095996510R | 21 | |
| S6 | SCREW 3BTC 4X8B | 8109340083R | 4 | |
| S5 | DOT SCREW 2BTC 3X8B | 8095996510R | 2 | |
| S4 | SCREW 3BTC 3X6N | 8109330064R | 10 | |
| S3 | DOT SCREW 2BTC 3X8B | 8095996510R | 4 | |
| S2 | DOT SCREW 2BTC 3X8B | 8095996510R | 4 | |
| S1 | SCREW BM 3X8B | 8009130083R | 4 | |

| | | | | |
|----|------------------------|--------------|----|---------|
| 40 | | | | |
| 39 | TOP COVER | 046123495310 | 1 | |
| 38 | WASHER | 6535996420 | 1 | |
| 37 | FOOT | 6335998410 | 4 | |
| 36 | POWER TRANS | 2828051120 | 1 | PAM-520 |
| | | 2828051020 | 1 | PAM-510 |
| 35 | OUTPUT TRANS | 2818083100 | 1 | PAM-520 |
| | | 2818083000 | 1 | PAM-510 |
| 34 | AMP B'D | 4005419300 | 1 | |
| 33 | SPACER HOLDER | 6705998410 | 2 | |
| 32 | SPACER | 6705998510 | 2 | |
| 31 | HEAT SINK | 7502087510 | 1 | |
| 30 | FAN BKT "L" | 6505920310 | 1 | |
| 29 | FAN BKT "R" | 6505920320 | 1 | |
| 28 | PCB BKT | 6505955520 | 2 | |
| 27 | PUSH KNOB | 048523992112 | 4 | |
| 26 | KNOB CONTROL | 048543991912 | 6 | |
| 25 | INPUT B'D | 4005419100 | 1 | |
| 24 | PCB BKT | 6505956710 | 1 | |
| 23 | TERMINAL B'D | 4005419110 | 1 | |
| 22 | HEAT SINK DIODE | 7503090510 | 1 | |
| 21 | HEAT SINK TR | 7503090520 | 1 | |
| 20 | POWER B'D | 4005419000 | 1 | |
| 19 | TUNER HOLE COVER | 8575985610 | 1 | |
| 18 | SNAP RIVET | 6538998810 | 2 | |
| 17 | MAIN CHASSIS | 046121670811 | 1 | |
| 16 | ATT B'D | 4005419400 | 1 | |
| 15 | FRONT B'D | 4005419200 | 1 | |
| 14 | LED LIMITER (H=15.5mm) | 8545993610 | 10 | |
| 13 | LED LIMITER (H=14mm) | 8545993680 | 14 | |
| 12 | CHASSIS FRONT | 6121670610 | 1 | |
| 11 | FRONT PANEL | 048602957511 | 1 | |
| 10 | MONITOR B'D | 4005419120 | 1 | |
| 9 | SPEAKER UNIT | 5008984400 | 1 | |
| 8 | SLIDE KNOB | 8545084520 | 1 | |
| 7 | MONITOR PANEL | 048522989911 | 1 | |
| 6 | PUSH KNOB | 048543975211 | 10 | |
| 5 | CONTROL KNOB | 048543996313 | 5 | |
| 4 | PUSH KNOB | 048543975221 | 1 | |
| 3 | CONTROL KNOB | 048545983511 | 1 | |
| 2 | CONTROL KNOB | 048543977911 | 6 | |
| 1 | KNOB CONTROL | 048543991912 | 16 | |
| NO | PART NAME | PART NUMBER | EA | REMARKS |